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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1761
Examiner : Lien Thuy Tran
Applicants : Cheree L. B. Stevens et al.
Appln. No. : 09/778,470
Filing Date : February 7, 2001
Confirmation No. : 4695
For : WATER-DISPERSIBLE COATING COMPOSITION
FOR FRIED FOODS AND THE LIKE

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DECLARATION OF JOHN STEVENS

I, John Stevens, do hereby declare as follows:

1. I am the Vice President for Research and Development for Advanced Food Technologies, assignee of the present patent application. I graduated from Cornell University with a Food Science Degree in 1970. I have had over 30 years experience in the food science industry. I have had extensive experience specifically in the food coatings area for 14 years, since 1989.
2. From 1989 to 1991, I was the Research and Development Manager for Universal Foods Corporation, where I directed coated french fry developments which resulted in 60 million dollars in additional annual sales for the company. I developed the first clear coat french fry, now having estimated markets sales of over 1 billion pounds per year.
3. From 1991 to 1994, I conducted food coatings research for McCain Foods, Inc.
4. From 1994-1996, I was the Research Manager for Miles Willard Company, directing all frozen and non-snack dehydrated potato development, including the development of a patented clear coat french fry product.
5. From 1996-1999, I was the Director of Northwest Region Technical Services for Newly Weds Foods, Inc. I established, staffed and directed all formula, process, specification, and commercialization of seasoned and clear coat french fry batters for all french fry processors and chain accounts throughout the United States. I developed and

commercialized a signature clear coat french fry for a major processor and for a major national chain account.

6. From 1999 to date, I have served as the Vice President of Research and Development for Advanced Food Technologies. A copy of my resume is attached hereto as Exhibit 1.

7. Cheree Stevens, the inventor of the above-identified patent application, is my spouse, and is the Director of Technical Services for Advanced Food Technologies, Inc. Cheree Stevens also has considerable experience in food sciences, having obtained her degree in Food Technology from the South Glamorgan Institute, University of Cardiff, Wales, UK in 1984. She has devoted her professional career to food sciences, and has specifically focused on food coatings since becoming employed by Advanced Food Technologies in 1999.

8. Although not a patent attorney, I am familiar with patents. I am a named inventor on patents, including the Stevens et al. United States Patent 5,965,189 identified in the "Background of the Invention" of the present application. I understand that in order to be patentable, an invention must be new. I also understand that the subject matter to be protected by the patent must not have been obvious to one of ordinary skill in the art at the time the invention was made.

9. I understand from patent counsel that the first step in considering whether or not an invention is patentable is to determine the scope and content of the prior art, and that this involves determining what the prior art would have taught to one of ordinary skill in the art at the time the invention was made, without the benefit of "hindsight."

10. I have been asked to give my opinion, based on my experience, of the level of skill in which a person of ordinary skill in the food technology art has. In my experience, a person of ordinary skill in the food science art has at least a Bachelors Degree, and at least three to six years of experience working in the food science field. Those with greater experience can make up for the lack of a Bachelors Degree, and those with advanced degrees can probably come up to speed more quickly than three to six years.

11. Considered as a whole, the prior art teaches one of ordinary skill in the art the necessity of using corn starch in food coatings made from vegetable and/or cereal materials, especially coatings for potatoes to be fried. My '189 patent is directed to a food coating, especially for potatoes to be fried, comprising corn starch, corn flour and dextrin. It is typical for such food coatings to include corn starch. All of the patents listed in the "Background of the Invention" of the above-identified Cheree Stevens patent application are directed to food coatings which include corn starch. To my knowledge, all commercial vegetable and/or cereal based coatings sold prior to the date of this invention, had included corn starch.

12. Accordingly, both Cheree Stevens and I were surprised to discover that Cheree had obtained a coating giving outstanding crispness, mouth feel and hold time in a food coating which was substantially free of corn starch, by using a rice component and a dextrin component in particular ratios and within a particular range. Nor was starch required from any hybrid or genetically modified plants having the *aedu* or *dusu2* genotype, which I believe as a practical matter can only be a corn starch.

13. Counsel prosecuting the above-identified patent application have asked me to review additional prior art to determine whether its teachings are consistent with the prior art as I know it, i.e. teaching the importance of using corn starch in food coatings, especially french fry potato food coatings. I believe the additional art would, considered with the prior art as a whole, teach those of ordinary skill in the art the importance of using corn starch in such coatings.

14. None of the prior art which I have reviewed discloses or suggests to one of ordinary skill in this art a food coating comprising from about 25% to about 70% by weight of the combination of a rice component and a dextrin component in a ratio of rice to dextrin of from about 1:2 to about 5:1, where the composition is substantially free of corn starch, and is substantially free of starches from plants crossbred or modified to contain either the dull sugary 2 genotype (*dusu2*) or the amylose extender dull genotype (*aedu*).

15. I have been asked to review Higgins Patent 5,976,607 (Exhibit 2) and Rogols et al. 5,897,898 (Exhibit 3), which I am informed were cited by the Examiner in an Office

Action pertaining to this patent application. The Higgins '607 reference discloses a food coating composition containing from about 25% to about 90% by weight corn starch. Rogols et al. '898 emphasizes utilizing a hydrolyzed starch having a dextrose equivalence of from about 0.2 to about 0.8, with corn and potato starch being particularly preferred. While some of the examples used potato starch instead of corn starch, and while those examples include rice flour, they do not utilize dextrin (see Table 1, Table 3 and Table 4). While the formula of Table 3 includes rice flour and "maltodextrin," maltodextrin is not "dextrin."

16. I have also reviewed a number of additional prior art references which are being brought to the attention of the Patent Office. Exhibit 4 is a prior art batter formula which employed 14% corn starch, dextrin, rice flour and other ingredients.

17. Newly submitted Rogols 6,022,569 (Exhibit 5) employs corn starch in many of its examples, in that corn starch comprises 40% of "Crisp Coat® UC," the other 60% comprising tapioca dextrin. The newly cited Horn Patents 6,080,434 (Exhibit 6) and 6,159,521 (Exhibit 7) claim coatings comprising at least 2% by weight corn starch. The newly cited Friedman Patent 5,928,693 (Exhibit 8) teaches a clear coat food coating including rice, flour, dextrin within the claimed range, and a starch, which as a practical matter comprises corn starch. The starch is said to be from a crossbred or genetically modified plant containing the aedu or dusu2 genotype, which it is believed currently has only been done with maize.

18. Regarding the content of "Crispcoat™ UC," which was used in some of the examples in Rogols Patent 6,022,569, attached hereto as Exhibit 9 is a "Technical Service Bulletin" from *National Starch and Chemical Company* dealing with Crispcoat™ UC. As can be seen by reference to the document, "CRISPCOAT UC is a specialty blend of high amylose corn starch and tapioca dextrin."

19. On two separate occasions, I have contacted representatives of *National Starch and Chemical Company* to determine the percentage distribution between corn starch and dextrin in Crispcoat™ UC. On both occasions, I was informed that corn starch comprises 40% of Crispcoat™ UC and dextrin comprises 60% of Crispcoat™ UC. One can see therefore, that the ratio of rice flour to dextrin in any of the examples in Tables 6-11 fall outside of the

claimed range of the present application, i.e. a rice to dextrin ratio of from about 1:2 to about 5:1. It appears that the closest one comes to that ratio range is in the coatings of Tables 7 and 8 which employ 45% rice flour and 12% Crisp Coat® UC. The ratio of rice to dextrin in those examples is 6:1, and those examples also include approximately 5% corn starch.

20. It has been pointed out to me by counsel that United States Patents 6,159,521 and 6,080,434 to Horn include Formulas 4A-4E of Example 4 and Formulas 3C, 3G and 3H of Example 3 which, on their face, appear to comprise between 25 and 75% of a combination of rice flour and dextrin, in a rice to dextrin ratio of from about 1:2 to about 5:1, which are substantially free of corn starch. However, I do not believe that anyone of ordinary skill in the food coating art would read these examples as teaching such a food coating composition.

21. The Horn patents emphasize the importance of using at least 2% by weight of a crosslinked dent corn starch. The claims of both Horn patents are directed to the food coatings containing at least 2% corn starch.

22. Example 4 of the Horn patents specifically state that it is a comparison of food coating formulas employing corn starches having different levels of acetylation. Yet Table 4-1 refers to the use of acetylated potato starch. I believe that one of ordinary skill in this art would readily identify this as a typographical error, since the example obviously has to do with different acetylated corn starches.

23. Similarly the description of Example 3 indicates that it is the comparison of various coating formulations using potato starches in combination with different types of corn starch. Since two different potato starches are listed at the top of Table 3 and a 5% acetylated corn starch, a crosslinked corn starch and a 4% acetylated "potato" starch are listed at the bottom of the Table, I believe those of ordinary skill in the art would assume that the 4% acetylated "potato starch" listed with the other corn starches at the bottom of the table is in fact a corn starch.

24. To the extent that Examples 3G and 3H do not appear to list the use of corn starch, I believe that those of ordinary skill in the art would either regard this to be an error.

particularly in view of the fact that the percentages of the ingredients do not accurately add up to 100%, or they would simply interpret these examples as failed experiments.

25. Thus, I believe that those of ordinary skill in this art would view the Horn patents as teaching away from the use of a rice component and dextrin component food coating which is substantially free of corn starch.

26. As I stated above in paragraph 17, I believe that the starch referred to and claimed in Friedman Patent 5,928,693 is, as a practical matter, corn starch. I include herewith a paper submitted by David V. Glover, Department of Agronomy, Purdue University (Exhibit 10), which supports this conclusion.

27. The '693 patent states at column 3 that the use of starches from plants with the amylose extender dull genotype is taught in U.S. Patents 5,497,586; 5,260,076; 5,120,562; 5,035,912 and 4,790,997. The reference to Patent 5,497,586 is evidentially a typographical error or a misprint, since the 5,497,586 patent is directed to a framed glazing unit. Patent 5,260,076 (Exhibit 11), like the '693 patent itself, indicates that while the amylose extender gene is present in maize and barley, it indicates only maize for the dull gene and the sugary 2 gene. Thus, as a practical matter, the starch referred to is corn starch.

28. Patent 5,120,562 (Exhibit 12) relates to a starch batter, and states that:

"Any plant that produces edible starch and can be crossbred to produce a plant that is an aedu [amylose extender dull] homozygous genotype may be used to provide the aedu starch. Plants that produce edible aedu starch are obtained not only by standard plant cross-breeding techniques by also by moving the aeaedudu genotype to another portion of the plant genome by translocation, inversion or other methods of chromosome engineering. The preferred plant source is maize."
(Col. 2, lines 1-9).

Thus, as above, this reference refers as a practical matter to corn starch.

29. Patent 5,035,912 (Exhibit 13) discloses a starch jelly candy which uses an amylose extender dull starch (aedu) and a dull sugary 2 starch (dusu2) (column 3, lines 57-

67). The patent does not indicate what specific plants can be used to obtain such starches, but refers back to Patents 4,790,997 and 4,792,458.

30. Patent 4,790,997 (Exhibit 14) relates to food stuffs containing starch having the amylose extender dull genotype, but makes the same comment as the '693 patent to the effect that while the amylose extender mutant gene is present in maize and barley, the dull genotype is present only in maize. As with the other references above, it states that "maize is the preferred plant source."

31. Patent 4,792,458 (Exhibit 15) also supports my conclusion that as a practical matter, a starch having the aedu genotype or the dusu2 genotype is a corn starch, in that it discloses food stuffs containing such starches with maize being indicated as the preferred plant source. The '458 patent does assert, however, the theoretical possibility that both the su2 and the dull mutant genes can be found in barley and sorghum, as well as maize. If this assertion is true, it is at least theoretically possible that the dusu2 genotype could be engineered using barley or sorghum, as well as maize. However as a practical matter, it is believed that the dusu2 genotype has only been engineered or crossbred using maize starch from a plant having the dusu2 genotype or the aedu genotype is, as a practical matter, corn starch.

32. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further, these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 USC §1001, and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

July 8, 2003
Date

John F. Stevens
John Stevens

JOHN STEVENS

200 Cobblestone Lane • Idaho Falls, Idaho 83404 • (208) 529-9027

OBJECTIVE

Management position in food-related product development

PROFESSIONAL SUMMARY

Director with 28 years of product management experience. Demonstrated ability to structure innovative solutions to complex problems that allow for increased profits. Proven ability to develop quality teams that motivate others to their peak performance and reduce execution time.

CAREER HISTORY

NEWLY WEDS FOODS, INC.

1996 – 1999

Idaho Falls, Idaho

DIRECTOR, NORTHWEST REGION TECHNICAL SERVICES

- Established, staffed, and directed all formula, process, specification, and commercialization of seasoned and clear coat french fry batters for all french fry processors and chain accounts throughout the United States.
- Worked directly with all french fry processors to define, develop, and implement process improvements, and introduce new and cost reduced products to their lines.
- Salvaged failing business at key customer by demonstrating technical expertise with flours, starches, seasonings, processing capability, and implementing process savings in excess of \$1,000,000 per year.
- Developed and commercialized a signature clear coat french fry for a major processor and for a major national chain account.
- Developed patent-pending process for maintaining light colored fried potato products throughout the year.

MILES WILLARD COMPANY

1994 – 1996

Idaho Falls, Idaho

RESEARCH MANAGER

- Directed all frozen and non-snack dehydrated potato development, creating 8 new product opportunities and bringing on board two new clients on a royalty-paying basis.
- Developed patented clear coat french fry product and patent-pending processes for reduced fat coated fries, and for improved chopped & formed product.

McCAIN FOODS, INC.

1991 – 1994

Frozen Foods Division – Othello Washington

DIRECTOR, TECHNICAL SERVICES

- Directed all research, quality assurance, nutrition, specification, labeling, and internal sensory for the USA multi-plant operation.
- Commercialized signature french fry line, resulting in \$30,000,000 sales.
- Commercialized first flavored marinade french fry line valued at \$10,000,000, obtaining patent.

UNIVERSAL FOODS CORPORATION

1989 – 1991

Frozen Foods Division – Twin Falls, Idaho

R&D MANAGER, NEW PRODUCTS

- Directed coated french fry developments and internal sensory resulting in \$60,000,000 additional sales.
- Developed first clear coat french fry now having estimated market sales of over 1 billion pounds per year.
- Instituted cost reduction programs resulting in \$4,000,000 savings per year.

JOHN STEVENS

STEVENS LABORATORIES, INC.

1988 – 1989

Rochester, New York

GENERAL MANAGER

- Took over family business of food & wastewater analyses from father who was retiring. Computerized and streamlined operations.

THE PILLSBURY COMPANY

1985 – 1988

Minneapolis, Minnesota

- Directed all dehydrated potato maintenance valued at \$150,000,000.
- Created concept and development of marketed microwave potato specialty line valued at \$20,000,000.
- Headed team for the development of 12 marketed food service bakery toppings valued at \$8,000,000.
- Developed and implemented cost reduction programs amounting to more than \$1,000,000, achieving an award for outstanding cost reduction contribution.
- Developed a sulfite program that established benchmarks for the FDA and resulted in identifying the ability to significantly reduce use levels.

THE R. T. FRENCH COMPANY

1970 – 1985

(Potato Division acquired by The Pillsbury Company in 1985)

Rochester, New York / Idaho Falls, Idaho

MANAGER, FOOD SERVICE BUSINESS DEVELOPMENT

1984 – 1985

- Identified new business areas resulting in a \$10,000,000 development strategy.
- Built the food service laboratory and directed programs requiring identifying and implementing new package design / copy, resulting in increased product marketability.
- Developed and launched a new concept of potato in a pouch resulting in \$15,000,000 sales.
- Worked directly with distributorships, national account managers, brokers, and ad / creative design houses.

MANAGER, PRODUCT RESEARCH & DEVELOPMENT

1978 – 1984

- Built the research facility and directed new product and sensory programs resulting in \$32,000,000 additional retail sales per year and \$40,000,000 food service sales per year.
- Constructed and directed cost reduction programs resulting in \$6,000,000 savings.
- Oversaw development of specifications, nutrition labeling, and package design.

SUPERVISOR, TECHNICAL SERVICES

1976 – 1978

SENIOR SCIENTIST

1974 – 1976

FOOD SCIENTIST

1970 – 1974

- Responsible for the development of the Automash Potato Dispenser system, and sales personnel training resulting in \$8,000,000 sales per year. Developed specialty blend mashed products and food service casseroles for major chain accounts resulting in \$50,000,000 sales. Developed wet and dry system blends such as mustard, ketchup, spaghetti, barbecue, and specialty sauces.

EDUCATION

Cornell University, Ithaca, New York
The College of Food and Dairy Science

Bachelor of Science Degree, June 1970
(Food and Dairy Science)

REFERENCES FURNISHED UPON REQUEST